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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Sp

Office Action Summary	Application No. 10/502,462	Applicant(s) YAMAGUCHI, TAKASHI	
	Examiner Christopher H. Bond	Art Unit 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) ☐ Claim(s) ____ is/are allowed.
 6) ☒ Claim(s) 1-16 is/are rejected.
 7) ☐ Claim(s) ____ is/are objected to.
 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 22 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/22/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The Information Disclosure Statement filed July 22, 2004 has been acknowledged.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-7, 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf et al., USPAT 6,457,681 (Wolf) in view of DeAngelis et al., USPAT 6,247,994 (DeAngelis)**

5. As to claim 1, Wolf presents a control and operating system for model trains and discloses (column 5, lines 11-13), "The presents invention provides a control system that allows the user to operate multiple trains on the same track and under independent operating instructions." Wolf further discloses, (column 2, line 60 - column 3, line 6), "One feature of the present invention is a novel two-way remote control communication capability between the user and the model trains. This feature is accomplished by using

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a handheld remote control on which various commands may be entered, and a Track Interface Unit that retrieves and processes the commands. The Track Interface Unit converts the commands to modulated signals (preferably spread spectrum signals) which are sent down the track rails. The model train picks up the modulated signals, retrieves the entered command, and executes it through use of a processor and associated control and driver circuitry. The process may also be reversed, so that operating information regarding the train is provided back to the user for display on the remote control." Wolf further discloses (column 7, line 25 - column 8, line 63), "It should be understood that other processors or hard-wired circuitry could be used. The remote control...also has a wireless transmitter, such as the illustrated RF transceiver...and antenna...The processor...in the remote control...monitors the inputs from the user and from the RF antenna...for any changes and updates the display accordingly...The TIU...has a transceiver...that communicates with the transceiver...and antenna...located in the remote control...The model train...has a printed circuit board...installed inside...The printed circuit board...has a processor...at the center of the model train's operations. The processor...is connected to a receiver circuit...that picks the spread spectrum signals off from the train track rails in the preferred embodiment. The receiver circuit...passes the spread spectrum signals to a communication circuit...The communication circuit...in one embodiment, correlates the spread spectrum signals into a fixed data pattern that is capable of being recognized by the processor...The processor...upon receiving the data pattern containing the command, outputs an acknowledge signal to the communication circuit...The communication circuit...converts

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the acknowledge signal to spread spectrum format and outputs the acknowledge spread spectrum signal to a transmitter circuit...Alternatively, the processor...outputs an acknowledge signal in spread spectrum format itself directly to the transmitter circuit...In either embodiment, the transmitter circuit...places the acknowledge spread spectrum signal on the train track rails, where it is picked up by the TIU...The TIU processor...then converts the acknowledge spread spectrum signal into an RF signal, which the TIU transceiver...outputs to the remote control...In this way, there is "handshake" capability between the TIU...model train printed circuit board...and remote control...The reason for such bidirectional capability is that it allows the data about the model train...to be received by the user. This would meet the applicant's limitation of having a controller and a model controlled based on data transmitted from the controller, the transmitted data corresponding to an operation of the controller. The TIU corresponds the accessory device, which as per the applicant's limitation is provided separately from the controllers and the models, for conducting data communication with the controller and the model. Wolf's invention further meets the applicant's limitation of having a radio communication module for executing for executing the data communication and for conducting bilateral data communication and a control device for implementing various controls based on data communication conducted through the radio communication module. Although Wolf discloses that this invention can control multiple models, Wolf fails to disclose a plurality of sets including a controller and a model.

6. DeAngelis presents a system and method for communicating with and controlling toy accessories and discloses (abstract), "A system and method for controlling toy

vehicles has a plurality of pads coupled to a central station. Switches in the pads may be closed to select toy vehicles and the operation of motors for moving the vehicles forwardly, rearwardly, to the left and to the right and moving upwardly and downwardly a receptacle or bin for holding transportable elements...The pads are connected by wires to the central station, and may be interrogated selectively, sequentially or simultaneously by the central station. The central station forms packets of signals representative of the switch closures of the interrogated pads, and transmits the packets over a modulated carrier frequency to receivers in the vehicles...When the pads are interrogated by the central station, the signals from the pads are routed to the accessory or second central station. If the accessory is a smart accessory, the signals are processed by the smart accessory and then sent back to the first central station for transmission to the vehicles." DeAngelis further discloses (column 4, lines 2-4) that, "The central station receives the signals from the pad, and forms packets of data to be transmitted over radio frequencies to receivers in the toy vehicles."

7. The advantage of having multiple sets of models and controllers DeAngelis writes (column 1, lines 40-43) is that, "There is also a desirability, and even a need for play systems in which a plurality of vehicles can be remotely controlled by switches in hand-held pads to compete against one another..."

8. This is evidence that one of ordinary skill in the art would have reason/motivation/suggestion to have a remote control toy system with a plurality of controller and model sets for the purpose of letting users of the sets compete against one another.

9. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plurality of models and control sets as described by DeAngelis in the invention of Wolf for the purpose of allowing users of the sets to compete against one another.

10. As to claims 2 and 3, Wolf discloses (column 7, lines 32 - column 8, line 10) that, "...the remote control...communicates with the TIU...When the remote control processor...is required to send a command to the TIU...it does so through the RF transceiver...In one embodiment, the RF transceiver...operates in approximately the 900 MHz band using "ook" (on/off keying) modulation, although it would be recognized by those of skill in the art that other methods of communication could be used. The processor...via the transceiver...sends an RF signal that contains the command entered by the user...The TIU...has a transceiver...that communicates with the transceiver...and antenna...located in the remote control...Thus, in one embodiment the transceiver...is a 900 MHz band 9600 baud ook transceiver, although it should be understood that other transceiver configurations could be used. Further, an IR receiver could be used if the remote control...is transmitting IR signals, or any other wireless transceiver may also be acceptable depending on the wireless communication scheme implemented by the manufacturer. The transceiver...receives the RF signal containing the command issued from the remote control...The transceiver...passes the RF signal to a processor...that controls the TIU...The processor...decodes the command from the RF signal and issues an "acknowledgment packet" to the transceiver...for communication back to the remote control...The acknowledgment packet is used to inform the remote control...that the

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command was successfully received by the TIU...The processor...in the TIU...extracts the command from the RF signal and passes it to the communication circuit...for conversion into spread spectrum format...The communication circuit...then passes the spread spectrum signal to a transmitter...for outputting the spread spectrum signal..."

This would meet the applicant's limitation of having a control device for the accessory device (TIU) which comprises a device for receiving data (transceiver in TIU) sent from the controller, a device for executing procedure (processor), and a device for generating data corresponding to the procedure and sending the data through a communication module (transceiver in TIU). This would also meet the applicant's limitation wherein the accessory device (TIU) contains an information input section for accepting input from the controller (transceiver in TIU) and the control device of the accessory device comprises a device for executing a predetermined procedure (processor) based on information input from the information input section, and a device for generating data corresponding to a result of the procedure and sending the data through the radio communication module (transceiver).

11. As to claims 4 and 5, Wolf discloses (column 7, lines 16-23), "...the remote control...has an LCD display...a thumb-wheel...and various push buttons...The user enters commands by pressing a particular push-button...(or a predetermined series of push-buttons...) dedicated to a particular command, or by using the thumb-wheel...to scroll through a menu that appears on the LCD display...to select the desired command. The remote control...is preferably battery operated and is controlled by a processor..." As discussed above, the remote control has a transceiver and antenna. The TIU also

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has a transceiver that communicates with the transceiver and antenna located in the remote control. The system has a 'handshake' capability between the TIU, model, and remote control that allows data about the model train to be received by the user. This would meet the applicant's limitation of the control device of the controller comprised of a device for receiving the data sent from the accessory device (transceiver in remote control) and a device for executing a predetermined procedure based on the received data (processor in remote control). This would also meet the applicant's limitation of having a toy system wherein the sending device (transceiver in TIU) of the control device of the accessory device is configured to generate and send broadcast data for controllers, and the receiving device of the control device of the controller (transceiver in remote control) is configured to receive the broadcast data, and the executing device (processor in controller) of the control device of the controller is configured to execute a predetermined procedure. While Wolf does not explicitly disclose that this can be done for a variety of controllers, it would have however been a matter of choice, well within the capabilities of one skilled in the art to configure this system for broadcasting to multiple controllers, as this would merely involve varying an identity code or frequency associated with each controller when multiple controllers are used.

12. As to claims 6 and 7, as discussed above, the model has a receiver with a processor connected to it. This would meet the applicant's limitation of having a control device of the model comprised of a device for receiving the data (receiver) sent from the accessory device (TIU) through the radio communication module (transceiver in TIU) and a device for executing a predetermined procedure based on the received data

(processor in model train). As discussed above, Wolf discloses that this system can be used to control multiple trains. This would also meet the applicant's limitation of having a toy system wherein the sending device (transceiver) of the control device of the accessory device is configured to send broadcast data intended for a plurality of models, and the receiving device (receiving device in train) of the control device of each model is configured to receive the broadcast data, and the executing device (processor in train) of the control device in each model is configured to execute a predetermined procedure common to all the models for which the broadcast data is intended.

13. As to claim 10, as discussed above, Wolf discloses that either and IR or RF signal may be used as a means of communication in his invention. As Bluetooth is a radio frequency (RF) communications standard, this would meet the applicant's limitation of having a toy system, wherein the radio communication module is based on Bluetooth standards.

14. As to claim 11, the applicant's limitation of a remote control toy system comprising a controller, and a model controlled based on data transmitted from the controller, with the transmitted data corresponding to an operation of the controller and a control device in each the model and controller for executing remote control based on data communication conducted through the radio communication has been discussed above, and would have been made obvious by the invention disclosed by Wolf. The applicant's limitation of each the controller and model comprising a radio communication module based on Bluetooth standards which serves as a device for executing communication between the controller and the model would have been a matter of

choice, well within the capabilities of one skilled in the art, as Wolf discloses communication via RF or IR, and Bluetooth is clearly a subset of RF communication.

15. Regarding claims 12 and 14, Wolf discloses (column 8, lines 61-66) that, "The reason for such bidirectional capability is that it allows the data about the model train...to be received by the user. Such data may include, but is not limited to, the type of train...the digital address of the model train...the actual speed of the train..." Wolf further discloses (column 34, lines 41-44) that, "In order to obtain the quantity of smoke to be output by the smoke unit...the processor [in the model]...will determine the load on the motor...of a train(s) by calculating the power that is currently required to move the train(s) at a given speed." Wolf further discloses (column 42, lines 39-48) that, "Another feature that may be correlated to the speed is the smoke output. If the train is moving slowly, the smoke output can be set to lightly puff or stream smoke (or steam) from the smokestack. If the user enters a new speed, for example, one that is faster than the previous speed, the sounds and smoke will automatically increase with the increase in speed. In other words, the engine "chuff" sound will become more rapid as the wheel rotation rate increases, and the amount of smoke or steam will increase, thereby simulating a harder working engine." In this regard, the processor in the model varies noise and smoke output relative to model speed. Thus, when the processor of the model detects a change in speed, the processor then effects a predetermined decision--that is to say, it regulates the smoke and noise output relative to the speed change being detected. The actual speed of the model can also be reported to the user on the remote control. Hence, speed changes detected by the processor in the model can also

be reported to the user via the remote control. This would meet the applicant's limitation of a remote control toy system, wherein the model comprises a detection device for outputting a signal correlated to a play of the system, the control device comprising: a device for effecting a predetermined decision concerning the play based on the signal of the detection device, and a device for generating data corresponding to a result of the decision, and sending the data through the radio communication module, where the control device of the controller comprises: a device for receiving data sent from the model (transceiver), and a device for executing a predetermined procedure based on the received data (processor in controller). The applicant's limitation of each the controller and model comprising a radio communication module based on Bluetooth standards which serves as a device for executing communication between the controller and the model would have been a matter of choice, well within the capabilities of one skilled in the art, as Wolf discloses communication via RF or IR, and Bluetooth is clearly a subset of RF communication

16. In regards to claim 13, Wolf discloses (column 44, lines 17-26) that, "...it should be appreciated that the novel control system of the present invention has applicability to a wide range of model vehicles other than model trains, including, but not limited to, cars, buses, metro rails, airplanes (e.g., on the runway, or while flying using RF signals directly between the engine board of the plane and the hand-held remote), bicycles, etc. In short, any type of model vehicle that moves can be independently controlled by a user can utilize the novel control system of the present invention." As Wolf discloses that the device can be used to control cars, this would meet the applicant's limitation of

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a controller for remote-controlling a model comprised of an operation input section for accepting a steering operation of the controller on the model. As previously discussed, the remote control disclosed by Wolf also contains a processor and transceiver which would further meet the applicant's limitations of having a control device for implementing various controls based on data communication conducted through the radio communication module, where the control device comprises a device for determining steering information to correspond to a state of the operation input section (as described in Wolf--i.e. steering function present on remote control car controllers coupled with the controller's processor), a device for generating steering information data and sending the data through the radio communication module (Wolf's controller processor and transceiver), a device for receiving data sent from the outside (Wolf's transceiver in the controller), and a device for executing predetermined procedures based on the received data (Wolf's processor and transceiver in the controller). A radio communication module based on Bluetooth standards would have been a matter of choice, well within the capabilities of one skilled in the art, as Wolf discloses communication via RF or IR, and Bluetooth is clearly a subset of RF communication.

17. As to claims 15 and 16, as discussed above, Wolf discloses a TIU (applicant's accessory device) which transmits data received from a remote control via RF or IR means to a model. Wolf further discloses (column 12, lines 29-46), "The communication circuits...in the TIU...and the engine board...of the model train...respectively are capable of both receiving and transmitting spread spectrum signals in the above fashion.

Therefore, once the processor...in the model train...determines what the command is,

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the processor...assembles an acknowledge packet, which is intended to provide the TIU... and the remote control...with an indication that the command has been received. The acknowledge packet is sent to the communication circuit...for conversion into spread spectrum format...This is then sent through the rails back to the TIU...where it is received and detected by the transceiver...and communication circuit...in the TIU...The acknowledge spread spectrum signal is decoded as explained above and the acknowledge signal is passed to the TIU processor...In this manner, all components of the model train system are aware of the operating conditions of the model train at all times." This would meet the applicant's limitation of an accessory device used in combination with a controller and a model remotely controlled based on data transmitted from the controller, the accessory device comprised of a radio communication module, the module serving as a device for executing bilateral data communication between the accessory device and the controller and between the accessory device and the model, with a control device (processor in TIU) for implementing various controls based on data communication conducted through the radio communication module, where the control device comprises: a device for receiving data (transceiver in TIU), a device for executing a procedure (processor in TIU) based on information in the received data, and a device for generating data corresponding to a result of the procedure (transceiver in TIU) and sending it through the radio communication module. As discussed above, Bluetooth is a radio frequency (RF) communications standard, and since Wolf lists RF and IR wireless communication means, radio communication based on Bluetooth would be obvious by these means.

The additional limitation of an information input section for accepting information input from the controller (transceiver in TIU), wherein the control device comprises a device for executing a procedure (processor in TIU) based on information input from the information input section, and a device for generating data corresponding to a result of the procedure and sending the data (transceiver in TIU) through the radio communication module, also discussed above, would have been met and made obvious by Wolf's invention.

18. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf, in view of DeAngelis, and further in view of Smith et al., USPAT 6,109,186 (Smith).

19. As to claims 8 and 9, the applicant's limitation of having a model with a detection device for outputting a signal correlated to a play situation of the system, where a device effects a decision based on the signal of the detection device, and a device for generating data corresponding to a result of the decision, and sending data through the radio communication module, where the control device of the accessory device comprises: a device for receiving data sent from the module, and a device for receiving data on the controller have all be discussed above, and would have been made obvious by Wolf. Wolf however fails to explicitly disclose a device for determining restrictions, a device for generating data corresponding to the determined restriction, and the control device of the controller or model comprises: a device for receiving data corresponding to the restrictions, and a device for setting a corresponding relationship between the operation of the controller and the action of the model based on the receiving data.

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20. Smith presents an interactive slot car system and discloses (abstract), "The game has an intermediate control device which limits the control that the user has over the speed of the slot car, and can be programmed to simulate occurrences such as tire wear or fuel shortages. The intermediate control device limits car speed due to actual occurrences during racing, such as a car in another lane exiting the track, thereby creating and enforcing caution periods, as in auto racing." Smith further discloses (column 2, lines 20-38), "The invention may use rheostat controllers commonly available, while providing an interactive intermediate control device, such as a microprocessor as disclosed herein, to interpret a supplied lower voltage from the controller to the processor, and command a corresponding higher voltage to the track. The intermediate control device maintains direct control of the vehicles, and modifies control when instructed by the control program, in response to programmed track events such as practice, qualification, and race conditions, or sensed events like starts, cautions, pits, re-starts, and victory. The intermediate control device also provides means for detecting the status of track activities, by the use of a novel comparator system which detects low voltage. When voltage in a lane drops to zero, as compared to the commanded input voltage, a departure of a car from the track, or a "crash," is interpreted. In response, the intermediate control device slows, or otherwise modifies, the available voltage to the other lanes, thereby slowing the cars to simulate a "caution" condition, as in real racing." This would meet the applicant's limitation of a device for determining restrictions concerning an action of at least one model based on the received data (Smith's intermediate control device slowing cars when one car leaves the

track) and a device for setting a corresponding relationship between the operation of the controller and the action of the model based on the received data (intermediate control device governs voltage applied to track regardless of voltage provided by the rheostat controllers). This would further meet the applicant's limitation wherein the device for setting a corresponding relationship between the operation of the controller (intermediate control device in Smith) and the action of the model changes a corresponding relationship between a quantity of an operation of the controller (i.e. voltage provided from the controller to the track in Smith) concerning specific action of the model and a quantity of control (voltage provided) according to the restrictions.

21. The advantage of providing these restrictions, Smith writes (column 1, lines 51-62) is that prior art racing systems, "falls short of providing an accurate simulation of today's real motor sporting events. Prior art simulations use rheostat hand controllers to directly vary the voltage to the track and these systems have no means of indirect control in response to specific track events. Power to the vehicles is either on or off, with no reduction steps available for forcing players to slow their cars for running starts, simulated malfunctions, fuel shortages, or caution periods. The prior art devices do not have means to detect vehicle crashes, nor means for realistically enunciating such events."

22. This is evidence that one of ordinary skill in the art would have reason/suggestion/motivation to use the intermediate control device which limits speed in certain situations for the purpose of adding more realism to a game.

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23. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the toy control system as proposed by Wolf in view of DeAngelis with the intermediate control device which limits speed in certain situations as described by Smith for the purpose of adding more realism to a game.

Citation of Pertinent Prior Art

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Byrne et al., USPAT 6,408,226 and Peters et al., USPAT 6,491,566--as these both disclose a system and method for controlling a team of robots; Grubba et al., USPAT 7,215,092--related to bidirectional control of a model; Smith III et al., USPAT 4,247,107--as this includes a multiple car game which has a processor that randomly effects car operation by introducing failures and limiting car control; Arnold USPAT 7,137,862 and Rosenhagen et al., USPAT 4,334,221--as these both describe multi-vehicle controllers, and Smith et. al., USPAT 5,970,882--which relates to interactive slot car systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher H. Bond whose telephone number is (571) 272-9760. The examiner can normally be reached on M-F 9:30am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan M. Thai can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHB



JOHN M. HOTALING, II
PRIMARY EXAMINER